

The verdict

Refrigerator 1

Upright citizen. Avg. 33.48 kWh/mo. x \$.11/kWh = \$3.68 per month. Up to 20 years of highly efficient service.

Refrigerator 2

Released on good behavior. Avg. use 46.61 kWh/mo. x \$.11/kWh = \$5.13 per month. Expect 5-10 years of satisfactory service. Monitor electricity bills for changes in energy use.

Refrigerator 3

Hardened criminal, sentenced to recycling. Avg. use 227.86 kWh/mo. x \$.11/kWh = \$25.07 per month. Replacing this energy-thief with an Energy Star model will pay owner back in 27 months!

Show your customers how to bring energy efficiency home for good with audit tools from the Equipment Loan Program. Call **720-962-7420** or log onto www.wapa.gov/es/loan/default.htm to reserve equipment.



Follow these guidelines from Energy Star to reduce the amount of energy your refrigerator uses:

Set the appropriate temperature.

Keep your refrigerator at 35 to 38 degrees Fahrenheit.

Place your fridge in a cool place.

Position your refrigerator away from a heat source such as an oven, a dishwasher, or direct sunlight from a window.

Allow air circulation behind the fridge.

Leave a few inches between the wall and the refrigerator, and keep the condenser coils clean if you have an older model. Read the users manual to learn how to safely clean coils. Coil cleaning brushes can be purchased at most hardware stores.

Check the door seals.

Make sure the refrigerator seals around the door are airtight. If not, replace them.

Keep the door closed.

Minimize the amount of time the refrigerator door is open.

If you buy a new refrigerator, be sure to recycle your old one. Many appliance retailers will pick up and recycle your old refrigerator when you purchase a new one. Visit http://www.energystar.gov/index.cfm?c=recycle.pr_refrigerator_recto find a recycler in your area.



Energy Services Web site
www.wapa.gov/es

Western's Energy Expert's Hotline
1-800-769-3756

This fact sheet is published by Western Area Power Administration for its power customers. Contact us at: Western Area Power Administration, PO Box 281213, Lakewood, CO 80228-8213
Telephone number 720-962-7419

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2009



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The great refrigerator robbery

Appliances account for about 17 percent of household energy consumption, and refrigerators are among the top three users. Is your refrigerator stealing you blind?



The suspects



Refrigerator 1
2002 21-cubic foot,
top freezer, internal icemaker



Refrigerator 2
1999 22-cubic foot,
top freezer, internal icemaker



Refrigerator 3
1980 24-cubic foot,
side-by-side, in-door icemaker

This "investigation" does not target any particular brand, but looks at how features, size, maintenance and especially age affect appliance performance. Most utility recycling programs aim to remove refrigerators of early '90s vintage or older from service.

According to Energy Star, 16 to 20 cubic feet is the most energy-efficient size, and top-mounted freezers use 10 to 25 percent less energy than bottom-mount or side-by-side models. Also, in-door icemakers are real energy vampires, because the chilled air inside escapes through the icemaker. This causes the refrigerator to cycle on more often to maintain its temperature. However, in a larger family where members get in and out of the freezer often to get ice, it might save a little energy.

The detectives

Watt's Up?

A deceptively simple power meter performs 24/7 surveillance on the suspects. Plug the meter into the socket and plug the refrigerator into the meter, and the game is afoot.

The software for producing graphs of the data comes with Watt's Up and is compatible with most personal computers. Users can print out graphs showing 18 different data sets, such as watt use, monthly average kilowatt-hour (kWh) use and monthly average cost.



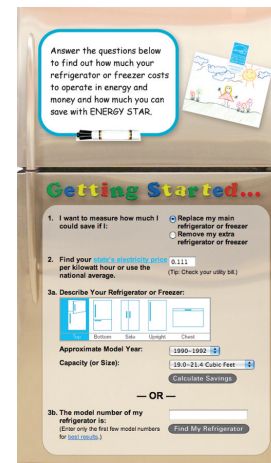
FLIR T360

Catch the suspects "red-handed," with an infrared camera that shows where your appliances are leaking heat—and cold!

The camera can be set to simultaneously take digital pictures while the user is taking IR shots, a convenient feature for reports. The viewfinder displays the temperature range within the picture, too.



You don't need to be Sherlock Holmes to find out if a new refrigerator can save you money. Amateur sleuths can use the Energy Star Refrigerator Retirement Savings Calculator at <http://www.energystar.gov/index.cfm?fuseaction=refrig.calculator> to do their own investigation. Replacing a 1980s model fridge with an ENERGY STAR-qualified model may save more than \$100 each year on your utility bills, and replacing a fridge from the 1970s could save nearly \$200 each year!

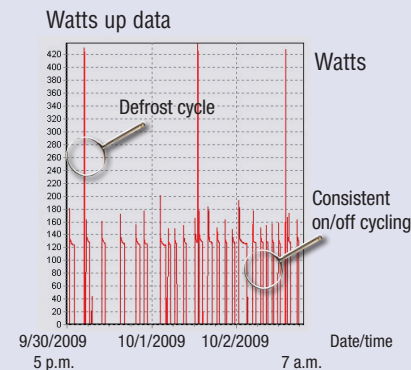


The evidence

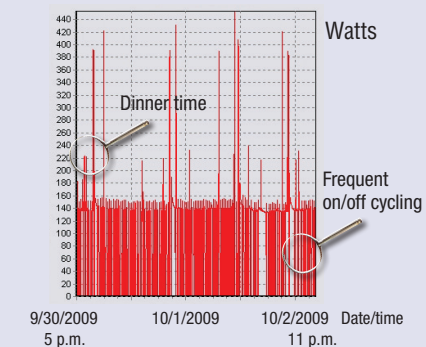
Numbers don't lie

Refrigerators were plugged into the power meters on Friday night around 5 p.m. to collect energy-use data for the entire weekend.

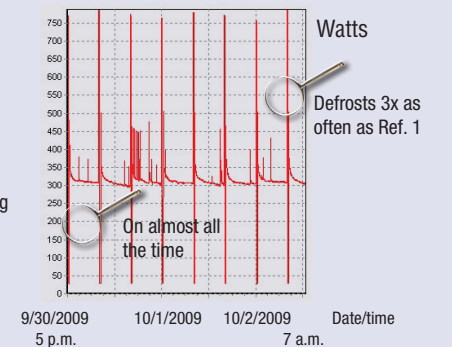
Refrigerator 1



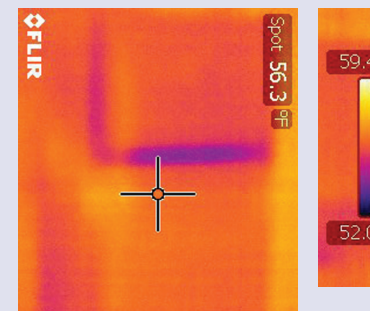
Refrigerator 2



Refrigerator 3



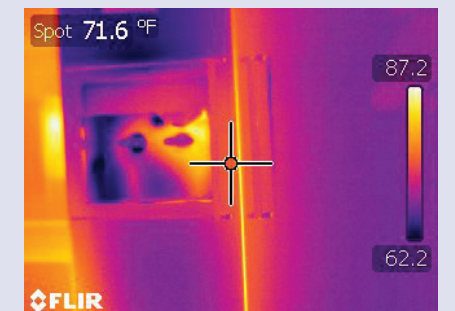
A picture is worth a thousand words—and hundreds of dollars!



Ref. 1 is an even color and warm temperature on the outside. Only a little cold air shows around the door seal.



The temperature of Ref. 2 ranges from 67 to 77 degrees. The doors are cold, suggesting that the insulation is not as good as it could be.



The heating strip in Ref. 3's door prevents condensation and door freeze-up, but this one is 25 degrees hotter than the coolest part of the picture. The temperature ranges from 62 degrees to 87 degrees.